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ABSTRACT

Educational outcomes are most commonly defined as the consequences of educational programs or as changes in individuals as a result of an educational program. Vocational education outcomes are those that occur specifically as a result of a vocational education program. The processes and criteria used to identify outcomes of vocational education programs vary with the purpose of the study. Criteria used in followup studies appear to be legislative requirements and information needs of a particular audience. Studies that focus on the identification of vocational education outcomes provide somewhat more information on actual processes used to identify the outcomes. Surveys and working conferences have been used to gain input from representatives of education and business and industry on appropriate outcomes. The literature that identifies vocational education outcomes can be divided into two categories: outcomes that have been identified and assessed in followup studies of vocational and/or nonvocational graduates and outcomes that have been identified as major vocational education outcomes in studies that focus on the process of identifying and assessing outcomes. Outcomes that have been assessed vary by study but generally include knowledge, skills, and attitudes. (YLB)

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A Review of Literature Related to Outcomes of Vocational Education

Identification and Assessment of Vocational Educational Outcomes

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Introduction

The use of outcome evaluation has gained increased attention in educational settings during the past several years. Educators, legislators, and the general public are concerned about actual results of schooling. Vocational educators, like other educators, are beginning to identify potential outcomes as the first step in the assessment process.

This report contains a review of the literature related to outcomes of vocational education. Information in this report identifies and describes: (1) the concept of outcomes, (2) processes/criteria for identifying vocational education outcomes, and (3) vocational education outcomes identified in the literature.

Concept of Outcomes

Numerous definitions of outcomes exist in the educational literature. Generally these definitions may be classified into two groups. The first group of definitions relate outcomes to changes in individuals as a result of an educational program. For example, Levine (1981) defined educational outcomes as changes in program participants. The second group of definitions are broader, relating outcomes to all consequences of education programs. Although this may include changes in individuals, it is not limited to this. Darcy's (1979) definition would be an example of this

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group,as he defines educational outcomes as real-world consequences of educational programs.

Vocational education outcomes may be viewed as a subset of educational outcomes--those that occur specifically as a result of a vocational education program. Darcy (1979) defines vocational education outcomes as short-term consequences and longer-term impacts resulting from vocational programs. Darcy's definition has been used in numerous outcome related studies conducted at the National Center for Research in Vocational Education. The application of this definition has provided further clarification of the concept of outcomes. Darcy (1979) suggests that outcomes include outputs, products, consequences, effects, results, and the impact of vocational programs whether intended or unintended, positive or negative, short-term or long-term, economic or noneconomic, direct or indirect. He further states that outcomes are typically multidimensional. For example, an outcome may be a mixture of educational and economic consequences, cognitive and affective, or individual and societal, and often occur as joint products. These vocational outcomes are manifested as changes in individual or societal capabilities, attitudes, status or circumstance. While some outcomes may be easily observable or quantifiable, others may be perceived more subjectively.

Darcy's deifnition of outcomes represents the viewpoint that outcomes should encompass all consequences of vocational programs. Other vocational educators believe that outcomes should focus on the change in individuals. For example, a publication of University Council for Vocational Education (Moss and Copa, 1982) defines outcomes as the changes made in the individual as a result of the experiences provided through vocational education delivery mechanisms. Evans and Hunter

(1979) suggest that these are best conceived as the value added to (or taken from) the individual.

The Illinois State Board of Education has also adopted this viewpoint. In the state of Illinois, statements of outcomes are defined as broad expressions of what students must know and be able to do as a result of schooling. While not defining any particular approach to instruction nor specifying any particular manner of organizing instructional programs, outcome statements provide an observable and measurable academic, knowledge, or skill basis for the expectations of schooling. They provide a listing of the key manifestations of learning in particular learning areas. Without adequate attainment of a particular outcome statement, it is assumed that the individual's future opportunities will be somewhat diminished.

Process/Criteria for Identifying Outcomes

The processes and criteria used to identify outcomes of vocational education programs varies with the purpose of each study. In general, the literature related to this area can be divided into two categories. The first category consists of follow-up studies of vocational and non-vocational graduates. The second category consists of studies which focus on the process of identifying and assessing outcomes.

The reports of follow-up studies in the literature often identify the outcomes which were assessed in the study, without describing the process or criteria used to select the outcomes. Therefore, it is not possible to generate a list of common criteria based upon a reading of the literature. Yet, it does appear that legislative requirements are one of the primary criteria used for the identification of outcomes to be assessed.

Legislative requirements include evaluating program effectiveness on the basis of employment in training-related occupations, employer assessment of the training and preparation for employment received by students, and student attainment of occupational competencies. Questions related to these outcomes are often included in follow-up questionnaires in national, state, and local studies (i.e., Blackford et al., 1979; Enoch, 1977; Tabler, 1976).

A second general criteria used to identify outcomes in follow-up studies appears to be the information needs of a particular audience--whether at the national, state, or local level. For example, information needs of local schools often relate to program improvement. Therefore, outcomes such as employment status, satisfaction with training, and completion/dropout rate might be assessed (i.e., Herstadt et al., 1979; Katz et al., 1974; Robon, 1977). Another example would be a state study conducted by Carvell (1981), designed to examine the social and non-traditional involvement in community, social, political, and/or church related activities. Outcomes related to this involvement were identified to provide the needed information.

In addition to follow-up studies, several major studies have been conducted which focus on the identification of vocational education outcomes. These studies provide somewhat more information on actual processes used to identify the outcomes. In a study directed by Darcy (1979) entitled "Examining Vocational Education Outcomes and Their Correlates" at the National Center for Research in Vocational Education, it appears that a multi-facet approach was utilized. Initially, over 250 outcome questions were identified by exploring the literature and through discussions with parties interested in vocational education programs (Farley, 1979). Numerous meetings were held with representatives from

business, labor, and education to gain input on the classification and importance of the outcomes. The list was eventually condensed to 15 outcomes which represent a sampling of key outcomes.

Another approach was utilized at a conference on "Outcomes for Vocational Education," sponsored by the National Center for Research in Vocational Education (McKinney and Fornash, 1983). In this study, project staff selected 18 outcomes from the 250 outcome questions identified by Farley (1979). The selection was based on historical importance, contributions to the unique attributes of the individuals, contribution to the improvement of social relationships among individuals, contribution to the production, development, and management of material wealth for the individual, business/industry, or country, and likely importance in the future. Six individuals, selected for their expertise in the fields of history, philosophy, psychology, sociology, economics, and futurism, were then commissioned to write papers that presented fundamental truths, theories, concepts, and major findings that could be used to support or reject each of the 18 outcomes. A working conference held to discuss these papers resulted in the verification of five key vocational education outcomes. It is stressed in this report that the evidence presented represents only one set of inputs needed to identify appropriate outcomes, and that failure to consider additional information would likely result in an inappropriate identification of outcomes.

Another related study entitled "Potential Vocational Education Indicators," was directed by Copa (Copa and Salem, 1982) at the Minnesota Research and Development Center for Vocational Education. Although this study focuses on the identification of indicators rather than outcomes, there is a relationship between the two and the process used could be

applied to the identification of outcomes. This study is one of a series of studies related to planning vocational education and therefore built upon previous work such as the development of a conceptual framework for planning vocational education (Copa, 1981), a list of important factors, priorities, and information needs in planning vocational education (Copa, Geigle, and Imade, 1976), and a description of the ends and means of vocational education (Lerwick, 1979). Information from these studies, as well as a comprehensive review of literature, was used to develop a list of characteristics of vocational education. A survey was then conducted of vocational edcuation administrators in Minnesota at the local and state level concerning their judgment of the importance of these indicators. Finally, a series of mini-conferences with groups of administrators were held to verify and discuss those indicators thought to be most important. In a later study (Copa and Scholl, 1983), a further verification of the indicators was made by examining: 1) current social and economic issues, 2) vocational education as a part of education more broadly conceived, ad 3) critical questions useful in interrogating any potential indicator.

From a review of these studies and discussions with the researchers involved, several conclusions may be made concerning the process and/or criteria used to identify vocational education outcomes. It is apparent that the process of identifying appropriate outcomes should involve gathering input from a variety of sources. It may be particularly helpful to include as one source, those persons who will ultimately be involved in the collection and use of outcome information. The most common methods for collecting this input appear to be survey and working conferences involving vocational educators. The selection of outcomes to be assessed may also be influenced by factors such as legislative requirements and information

needs of a particular region or state. Finally, the process of identifying or verifying outcomes should be continuous, if they are to remain relevant to changing social conditions and technology.

Vocational Education Outcomes Identified in the Literature

The literature which identifies vocational education outcomes again may be divided into two categories. The first category includes those outcomes which have been identified and assessed in follow-up studies of vocational and/or nonvocational graduates. The second category consists of outcomes which have been identified as major vocational education outcomes in studies which focus on the process of identifying and assessing outcomes.

The literature includes reports of hundreds of follow-up studies of vocational education graduates at both the secondary and postsecondary level. These include studies with a local, state, and national scope. Several documents exist which have reviewed and summarized these studies. The reader is referred to two documents for an extensive review of follow-up studies. The first document by Mertens et al., (1980) is entitled The Effects of Participating in Vocational Education. In this study, 232 follow-up studies reported from 1968 through 1979 were analyzed. The information is summarized according to 17 variables (outcomes) selected from actual or implied goals reflected in federal legislation and from conceptual work in evaluation previously conducted at the National Center for Research in Vocational Education. The second document by Bolland (1979) is entitled Vocational Education Outcomes: An Evaluative Bibliography of Empirical Studies. This bibliography provides descriptive annotations of 31 studies and evaluative comments on each.

Since extensive reviews of follow-up studies are available, there will be no attempt in this section to summarize all available data. Instead, examples of local, state and national follow-up studies of secondary and postsecondary graduates are presented in order to demonstrate the range of outcomes commonly assessed. Outcomes identified in major vocational education outcome studies are also presented. Brief descriptions of the example studies are provided, followed by a summary of the findings. In addition the outcomes identified in each study are summarized in a tabular format.

Numerous national follow-up studies of secondary graduates have utilized data from the National Longitudinal Study of the High School Class of 1972. For example, Creech (1977) conducted a study entitled "Comparative Analysis of Postsecondary Occupational and Education Outcomes for the Class of 1972". Outcomes examined in this study include: occupational mobility, job satisfaction, employment/unemployment, postsecondary education, and earnings. Evidence of these outcomes was obtained through an examination of survey responses of 17,726 secondary vocational and nonvocational graduates. Fetters (1975) examined the survey responses of 21,300 graduates in the study, "National Longitudinal Studies of the High School Class of 1972: Comparative Profiles One and One-half Years After Graduation". Fetters looked at outcomes such as: employment/unemployment, wages, postsecondary education, achievement, and self-concept. In the study "National Longitudinal Study of the High School Class of 1972: Tabular Summary of the First Follow-Up Questionnaire Data", Tabler (1976) again examined the survey responses of over 21,000 graduates. He examined the outcomes: postsecondary education, dropout, employment/unemployment, earnings/wages, job satisfaction, and occupation

related to training. The outcomes identified in these studies are quite similar due to the common source of data.

Fewer national follow-up studies of postsecondary students have been conducted. Those which have been, appear to focus on one or two outcomes. For example, in the study "Education and Employment of Post-Secondary Vocational-Technical and Transfer Education Students After Five Years", Noeth and Hanson (1976) examined the outcomes of occupation related to training and job satisfaction. Students included in the sample were those taking ACT's Career Planning Program. Cohen and Lewis (1976) also examined occupation related to training as well as earnings of postsecondary graduates in their study. This study focused on outcomes of cooperative education students and involved a mail survey to a sample of two and four year cooperative and noncooperative college students.

State level follow-up studies of secondary graduates generally involve mail surveys to a large number of graduates. Four to six different outcomes are commonly examined through this self-report method. For example, Elson and Gerken (1979) surveyed 15,879 students in the state of Virginia. This included 1978 secondary vocational graduates and those who left prior to completing a vocational program. They included outcomes such as: employment/unemployment, occupation related to training, earnings, postsecondary education/training, and satisfaction with training. In the study "Follow Up Report on Illinois 'Class of 71'," Felstehausen (1973) surveyed not only 12,020 secondary graduates, but also their employers. Therefore, findings included both graduates' and employers' perceptions on the attainment of outcomes such as: employment/unemployment, occupation related to training, satisfaction with employee, satisfaction with training, employer satisfaction, and postsecondary education/training.

Another similar study was conducted by Copa et al.,(1976) in the state of Minnesota. This study involved a survey of 17,642 secondary vocational and nonvocational education graduates of 1974. Outcomes examined included: employment/unemployment, earnings, and postsecondary education/training.

Several state level studies have used methods other than mailed surveys and somewhat smaller sample size. A study by Market Opinion Research (1973) entitled "Employers and Young Adults Look at Vocational Education" was conducted in the state of Ohio. This study involved the interviewing of 254 vocational graduates, 257 nonvocational graduates and 247 employers. Outcomes examined were: continuing education, earnings, employer satisfaction, satisfaction with training and attitude toward work. Durkee (1975) collected data on 1,181 former secondary vocational students in the state of Wyoming by interviewing school personnel. Employment, occupation related to training and continuing education were the outcomes studied.

Hamby (1978) included postsecondary and secondary graduates in their follow-up study in the state of Montana. Telephone interviews and mail questionnaires were used to collect data on employment/unemployment, postsecondary education, attitudes toward education/training, and employer perceptions. Four hundred forty-four students and 36 employers were included in the sample. A study by the Texas Education Agency (1977) focused on 1976 postsecondary graduates in the state of Texas. Surveys were mailed to 13,958 occupational graduates of certificate and AA degree programs in Texas postsecondary institutions offering vocational programs. Data was collected on the following outcomes: employment/unemployment, occupation related to training, and postsecondary education/training. A

third example of a state level follow-up study of postsecondary students is one conducted by the Wisconsin Board of Vocational, Technical and Adult Education (1976). Seventeen thousand two hundred and forty former postsecondary occupational students who graduated or terminated training during the 1977-78 school year were surveyed. Outcomes examined were: employment/unemployment, occupation related to training, satisfaction with training and earnings.

The largest number of follow-up studies appear to be conducted at the local level. These studies often combine mail survey, telephone interviews and/or personal interviews to collect information on specified outcomes. Three examples of secondary local studies are provided. Mail questionnaires, telephone,and in-school interviews were used by Herrnstadt et al., (1979) to collect follow-up information from secondary graduates in Boston, Massachusetts. The sample included graduates from four programs: cooperative vocational, regular vocational, work study, and general/academic. Outcomes examined included: employment/unemployment, occupation related to training, earnings, work habits, satisfaction with employment, postsecondary education/training, school attendance, and completion/dropout. Katz et al., (1974) conducted telephone interviews with 495 vocational and 91 academic graduates in the District of Columbia. Information was collected on the outcomes: employment, work habits, occupation related to training, earnings, employee satisfaction, satisfaction with training, and postsecondary education. Swanson (1976) conducted a follow-up study of secondary vocational and nonvocational graduates in Buffalo, New York. He used school records, mail, and telephone surveys to examine: employment, earnings, occupation related to training and satisfaction with training.

Follow-up studies of postsecondary students also appear to be conducted primarily at the local level, often within the community college. For example, Baretta (1975) surveyed 1977 graduates from 37 occupational areas offered at the Moraine Valley Community College in Palos Hills, Illinois. Outcomes studied were: employment status, earnings, employment/unemployment, occupation related to training, postsecondary education, satisfaction with training, and adequacy of training. Van Bramer (1979) surveyed 1,541 postsecondary graduates in relation to: employment, occupation related to training, earnings and satisfaction with training. The sample included the 1978 graduates of vocational education specialty areas at the Madison Area Technical College at Madison, Wisconsin.

The examples of follow-up studies provided in this section were extracted from the document The Effects of Participating in Vocational Education (Mertens et al., 1980). Mertens provides a summary of the findings of follow-up studies reviewed (pg. xiii):

- No difference in unemployment rates were found for vocational and nonvocational high school graduates. Postsecondary vocational graduates generally had lower employment rates than did their nonvocational peers.

- A majority (over 50 percent, usually closer to 70 percent) of secondary and postsecondary vocational graduates obtained jobs in training-related areas.

- Mixed results were reported for earnings. Some studies reported no differences between vocational and nonvocational graduates; others reported an initial earnings advantage for vocational graduates which disappeared over time. Trade and industry graduates at the secondary level and technical graduates at the postsecondary level consistently had higher earnings than graduates of other vocational programs. A majority of employers were satisfied with vocational graduates; a majority of graduates were satisfied with their jobs.

- Mixed results were reported for basic skill attainment and academic abilities, although vocational students appeared to be below academic and above or the same general curriculum students.

- Insufficient data were reported on occupational skill attainment to draw any conclusions (although employers were satisfied).
- Insufficient data were available to determine if vocational education helps to retain potential dropouts.
- About one-third of vocational graduates continued their education beyond the secondary level, while almost twice as many nonvocational graduates did so.
- Vocational graduates were satisfied with their training.
- Fewer vocational than nonvocational students planned to attend college.
- Vocational graduates reported feeling good about themselves.
- Civic activity (e.g., voting) was infrequent for both vocational and nonvocational graduates.

Although the studies described are but a few of the follow-up studies presented in the literature, it is possible to gain an overview of the types of outcomes identified and assessed in follow-up studies. Table 1 summarizes the outcomes identified and provides a means to compare these outcomes across studies.

In addition to the follow-up studies, several studies have been conducted which focus on the process of identifying and assessing vocational education outcomes. Three of these studies were described in the previous section (Darcy, 1979; McKinney and Fornash, 1983; and Copa, 1982). These studies attempted to identify what the major vocational education outcomes are or should be. The findings of these three studies follow and are summarized in Table 2.

A study directed by Darcy entitled "Examining Vocational Education Outcomes and Their Correlates" was conducted at the National Center for Research in Vocational Education. As previously described, this project involved identifying over 250 outcomes from the literature (Farley, 1979), gaining input on the classification and importance of these outcomes from

Table 1
Outcomes Assessed in Follow-Up Studies

Outcomes	Creech et al., 1977	Fetters 1975	Tabler 1976	Noeth & Hanson 1976	Cohen 1976	Felstehausen et al. 1973	Copa et al., 1976	Market Opinion Research 1973	Durkee 1975	Hamby et al., 1978	Texas Education Agency 1977	Wisc. Bd of Voc., Tech., & Adult Ed, 1979	Herrnstadt 1979	Katz et al. 1974	Swanson 1976	Baretta 1975	Van Brämer 1979	Elson & Gerken 1979
Employment/unemployment	x	x	x			x	x		x	x	x	x	x	x	x	x	x	x
Occupation related to training			x	x	x	x			x		x	x	x	x	x	x	x	x
Earnings/wages	x	x	x		x		x	x				x	x	x		x	x	x
Satisfaction with training						x		x				x		x	x	x	x	x
Adequacy of training																x		
School attendance													x					
Completion/dropout			x										x					
Job satisfaction	x		x	x									x					
Employer satisfaction						x		x		x								
Employee satisfaction						x								x				
Work habits													x	x				
Postsecondary education/training	x	x	x			x	x	x	x	x	x		x	x		x		x
Occupational mobility	x																	
Achievement		x																
Self-concept		x																
Attitude toward work								x										
Attitudes toward education/training										x								

Table 2

Outcomes Identified in Outcome Related Studies

Outcomes	Studies		
	Darcy 1979	McKinney & Fornash 1983	Copa 1981 (Indicators)
Basic education skills	x		
Occupational skills	x	x	
Employment	x		x
Knowledge of world of work	x		
Educational commitment	x		
Leadership qualities	x		
Postsecondary education	x		
Earnings	x		
Satisfaction with school	x		
Job search	x		
Occupation related to training	x		x
Self-help skills	x		
Employer satisfaction	x	x	x
Attractiveness of community for industrial development	x		
Employment for minority workers	x		
Trained workers for labor force		x	
Upgraded occupational competencies		x	
Retrained workers		x	
Performance of enrollee in program			x
Program cost			x
Projected job openings			x
Occupations			x

representatives of business, labor, and education, and condensing the list to 15 outcomes which represent a sampling of key outcomes. The 15 outcomes are: improving basic educational skills, development of useful occupational skills, reducing the risk of employment, acquiring world of work knowledge, effect on educational commitment, development of leadership qualities, postsecondary education progress, level of postschool earnings, satisfaction with current school experience, job search time, satisfactoriness to employers, attractiveness of the community for industrial development, employment opportunities for minority workers, job placement in training related fields and development of self-help skills. As a result, the outcomes identified include both individual student outcomes and program outcomes.

Another project conducted at the National Center for Research in Vocational Education (McKinney and Fornash, 1983) attempted to verify key vocational education outcomes according to viewpoints from other disciplines. An initial list of 18 outcomes were selected, based on predetermined criteria, from the 250 outcomes identified by Farley (1980). These outcomes were examined from a sociological, philosophical , economical, historical, psychological and futuristic viewpoint. Papers on these viewpoints were presented and discussed, resulting in the verification of five key vocational education outcomes for secondary and postsecondary level: satisfactoriness of employers, trained workers for the labor force, acquires useful occupational skills, upgraded occupational competencies, and retrained workers. Again, these include both individual and program outcomes.

The third study was directed by Copa (1982) and was entitled "Potential Vocational Education Indicators". This study focused on the identification of indicators of vocational education programs which are

important for planning, reviewing, and providing public information about secondary, postsecondary, and adult programs in Minnesota. An initial list of characteristics of vocational education was developed from a review of the literature. A survey was then conducted of vocational education administrators in Minnesota concerning their judgment of the importance of these indicators. Follow-up conferences were held to verify and discuss the indicators thought to be most important. The potential indicators identified were: employee satisfaction with quality of graduate's work, number of graduates employed in occupation related to program, projected job openings in occupations related to program, number of graduates employed, occupations for which program is designed to provide training, performance of enrollee in program, and program cost. Although indicators for planning, reviewing, and providing public information include more than outcomes, several of these indicators would be considered outcomes.

From a review of follow-up studies reported in the literature, it is possible to identify those outcomes most commonly assessed. It is apparent that five outcomes are most frequently assessed: employment/unemployment, occupation related to training, earnings/wages, satisfaction with training, and postsecondary education/training. Those least frequently assessed are related to attitudes, such as attitude toward work, attitude toward education and self-concept. Although there is evidence in the literature of the importance of these outcomes, they are more difficult to assess through methods such as mail surveys, which is the most common data collection technique used in follow-up studies.

In the related studies reported, there are few duplications in outcomes identified. One common characteristic of these studies is that outcomes identified include both student and program outcomes. Of the

student outcomes identified, occupational skills, employment, occupation related to training and employer satisfaction appear most frequently.

Summary

Educational outcomes are most commonly defined as the consequences of educational programs or as changes in individuals as a result of an educational program. Vocational education outcomes are those that occur specifically as a result of a vocational education program.

Numerous methods for identifying potential vocational education outcomes are reported in the literature. Surveys and working conferences have been used to gain input from representatives of education and business and industry on appropriate outcomes. In addition, legislative mandates and information needs for program improvement often influence what outcomes are identified and assessed. Outcomes which have been assessed vary with each study, but generally include knowledge, skills, and attitudes.

References

Baratta, Mary Kathyrne. Follow-up of 1977 occupational graduates. Palos Hills, Illinois: Moraine Valley Community College, 1978. (ED 157 578)

Blackford, Betty; Ruch, Robert; Aheran, James; and Seymour, Carol. Why Johnny can work: An analysis of employer's ratings of secondary area vocational technical center graduates. Pontiac, Michigan: Northeast Oakland Vocational Education Center, 1979.

Bolland, Kathleen A. Vocational education outcomes: An evaluative bibliography of empirical studies. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979.

Carvell, Fred and Carvell, Joan B. A study of the nontraditional and social impact of vocational education on individuals in Illinois. Springfield, Illinois: Illinois State Board of Education and CARVELL Education Management Planning, Inc., 1981.

Cohen, A. M. and Lewis, L. C. Cooperative education - a national assessment: An annotated bibliography. Silver Springs, Maryland: Applied Management Sciences, Inc., 1976.

Copa, G. H. Towards a strategy for planning vocational education. Minneapolis: Minnesota Research and Development Center for Vocational Education, University of Minnesota, 1981.

Copa, G. H.; Geige, E. K,; and Imade, V. O. Factors, priorities, and information needs in planning vocational education: Views of educational planners in Minnesota. Minneapolis: Minnesota Research and Development Center for Vocational Education, University of Minnesota, 1976.

Copa, G.; Irvin, D. E.; and Maurice, C. Status of former high school students: Procedure for local assessment. Minneapolis: University of Minnesota, 1976.

Copa, George H. and Salem, M. Nagi. Potential vocational education indicators: Vital statistics for planning, review and public information about vocational education in Minnesota. Minneapolis: Minnesota Research and Development Center for Vocational Education, University of Minnesota, 1982.

Copa, G. H. and Scholl, S. Developing vocational education indicators: Some steps in moving from selection to use. Minneapolis: Minnesota Research and Development Center for Vocational Education, University of Minnesota, 1983.

Creech, F. R. Comparative analysis of postsecondary occupational and educational outcomes for the class of 1972. Princeton, New Jersey: Educational Testing Service, 1977. (ED 139 845)

Darcy, Robert L. Vocational education outcomes: Perspective for evaluation. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979.

Durkee, James R. Wyoming placement and follow-up pilot project for vocational education students Fremont County 1970-74. Laramie, Wyoming: University of Wyoming, 1975.

Elson, D. E. and Gerken, S. H. Outcomes of vocational education in Virginia, 1979: A summary of the follow-up of 1977-78 secondary vocational education completions in Virginia. Richmond, Virginia: Virginia Department of Education, 1979.

Enoch, Lloyd W. A follow-up of former vocational students from the Roanoke city public schools 1975-76. Final report. Roanoke, Virginia: Roanoke City Public Schools, Department of Vocational and Adult Education, May 1977.

Farley, Joanne. Vocational education outcomes: A thesaurus of outcome questions. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979.

Felstehausen, Joyce L. Follow-up report on Illinois "Class of 71" occupational program alumni. Final report. Charleston, Illinois: Eastern Illinois University, Center for Educational Studies, 1973. (ED 087 866)

Fetters, William B. National longitudinal studies of the high school class of 1972. Comparative profiles one and one-half years after graduation. Washington, D.C.: National Center for Education Statistics, 1975. (ED 120 202)

Hamby, Jeanette. A comparison study of the benefits of secondary and postsecondary vocational education. Portland, Oregon: Northwest Regional Education Lab, 1978. (ED 156 909)

Herrnstadt, I. L.: Horowitz, M. A.; and Sam, A. M. The transition from school to work: The contribution of cooperative education programs at the secondary level. Boston, Massachusetts: Northeastern University, Department of Economics, August 1979.

Katz, D. S.; Morgan, R. L.; and Drewes, D. W. Vocational education and urban youth: A follow-up study of 1968, 1971, and 1972 graduates of the public schools of the District of Columbia, Final Report. Raleigh, North Carolina: North Carolina State University Center for Occupational Education, 1974.

Market Opinion Research. Employers and young adults look at vocational education. Detroit, Michigan: Market Opinion Research, 1973.

McKinney, Floyd L. and Fornash, Patricia. Selected evidence supporting or rejecting eighteen outcomes for vocational education. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1983.

Mertens, D. M.; McElwain, D.; Garcia, G.; and Whitmore, M. The effects of participating in vocational education: Summary of studies reported since 1968. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1980.

Noeth, Richard J. and Hanson, Gary R. Education and employment of postsecondary vocational-technical and transfer education students after five years. Journal of Vocational Education Research, 1976, 1(3), 15-30.

Robon, Nancy C. A comparative study of high school, two year college and four year college vocational/technical/professional selected business graduates with regard to their first full-time job and salary obtained after graduation. Paper presented at the Annual Forum of the Association for Institutional Research, 1977, (18th, Houston, Texas, 1978). (ED 154 861)

Swanson, Austin D. A study of the costs, benefits, and effectiveness of occupational education. Buffalo, New York: State University of New York at Buffalo, Faculty of Educational Studies, 1976. (ED 120 523)

Tabler, Kenneth. National longitudinal study of the high school class of 1972. Tabular summary of the first follow-up questionnaire data. Durham, North Carolina: Research Triangle Institute, 1976.

Van Bramer, Peter. Follow-up study of 1978 graduates Madison area technical college. Madison, Wisconsin: 1979.

Wisconsin Board of Vocational, Technical, and Adult Education. 1977-78 statewide student follow-up report. Madison, Wisconsin: Wisconsin Board of Vocational, Technical, and Adult Education, 1979.